

# EXHIBIT 8

**U.S. Patent No. 8,085,802 (“the ’802 Patent”) Exemplary Infringement Chart**

The Accused MoCA Instrumentalities are instrumentalities that Charter deploys to provide a whole-premises DVR network over an on-premises coaxial cable network, with devices operating with data connections compliant with MoCA 1.0, 1.1, and/or 2.0. The Accused MoCA Instrumentalities include the Charter Arris DCX3510, Charter Arris DCX3520, Charter Arris DCX3600, Charter Arris DCX3200, Charter Arris DCX3220, and substantially similar instrumentalities. Charter literally and/or under the doctrine of equivalents infringes the claims of the ’802 Patent under 35 U.S.C. § 271(a) by using the Accused MoCA Instrumentalities.

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<p>3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:</p>	<p>The Accused Services are provided using at least the Accused MoCA Instrumentalities including gateway devices (including, but not limited to, the Charter Arris DCX3510, Charter Arris DCX3520, Charter Arris DCX3600, and devices that operate in a similar manner), client devices (including, but not limited to, the Charter Arris DCX3200, Charter Arris DCX3220, and devices that operate in a similar manner), and substantially similar instrumentalities. The Accused MoCA Instrumentalities operate to form a broadband cable network over an on-premises coaxial cable network as described below.</p> <p>The Charter full-premises DVR network constitutes a broadband cable network as claimed. The Charter full-premises DVR network is a MoCA network created between gateway devices and client devices using the on-premises coaxial cable network. This MoCA network is compliant with MoCA 1.0, 1.1, and/or 2.0.</p> <p>“The MoCA system network model creates a coax network which supports communications between a convergence layer in one MoCA node to the corresponding convergence layer in another MoCA node.” (MoCA 1.0, Section 1. <i>See also</i> MoCA 1.1, Section 1.1; MoCA 2.0, Section 1.2.2)</p>

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	<p>“The MoCA Network transmits high speed multimedia data over the in-home coaxial cable infrastructure.”  (MoCA 1.0, Section 2. <i>See also</i> MoCA 1.1, Section 2; MoCA 2.0, Section 5)</p> <p>“PHY data packets carry MAC data and control frames as PHY payload. Figure 4-3 shows an example of how a PHY data packet is constructed from a MAC frame. In this example, the FEC-padded MAC frame is encrypted and encoded into two Reed-Solomon code words, the last code word being shortened to minimize FEC padding. The encoded data is ACMT padded, scrambled and modulated onto the sub-carriers of three ACMT symbols. The ACMT symbols are bin-scrambled and then transformed to the time-domain where a cyclic prefix is added to each ACMT symbol to obtain the PHY data payload. Finally, a preamble is prepended to the PHY data payload and is filtered and upconverted to RF for transmission onto the media. In practice, the number of Reed-Solomon code words and number of ACMT symbols per PHY data packet will vary as a function of the MAC frame size and modulation profile. The processing steps referred to here are specified in Section 4.3.”  (MoCA 1.0, Section 4.2.1.2. <i>See also</i> MoCA 1.1, Section 4.2.1.2, MoCA 2.0, Section 14.2)</p> <p>Charter utilizes the MoCA standard to provide an on-premises DVR network over an on-premises coaxial cable network as shown below:</p>

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	<p><b>MoCA Router Connection</b></p> <p>Figure 5 - A Typical Mixed MoCA/WiFi Home Network</p>
<p>formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, including formatting a data and control packet for transmission within the broadband cable network, the data and control packet having a header and a variable length payload, the header having at least five fields selected from the group consisting of a transmit clock field, packet type field, packet subtype field, version field, source node ID field, destination node ID field, and header check sequence field as described below.</p>	<p>The Accused MoCA Instrumentalities operate to format the packets in a MAC subsystem that transmits the packets within the broadband cable network, including formatting a data and control packet for transmission within the broadband cable network, the data and control packet having a header and a variable length payload, the header having at least five fields selected from the group consisting of a transmit clock field, packet type field, packet subtype field, version field, source node ID field, destination node ID field, and header check sequence field as described below.</p>

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<p>node ID field, destination node ID field, and header check sequence field;</p>	<p>For example, by virtue of their compliance with MoCA, the Accused MoCA Instrumentalities include circuitry and/or associated software modules that format the packets in a MAC subsystem that transmits the packets within the broadband cable network, including formatting a data and control packet for transmission within the broadband cable network, the data and control packet having a header and a variable length payload, the header having at least five fields selected from the group consisting of a transmit clock field, packet type field, packet subtype field, version field, source node ID field, destination node ID field, and header check sequence field.</p> <p>“The MAC protocol includes the transmission of control packets and data packets. Control packets are used for Link Layer control operations such as network admission, link maintenance operations, transmit opportunity assignment via MAP’s, transmit power control and bandwidth requests. Data packets transport upper layer information across the network. To facilitate admission, the Network Coordinator transmits Beacons at fixed intervals. Beacons are messages which contain basic information for the network’s operation.”</p> <p>(MoCA 1.0, Section 2.3.1. <i>See also</i> MoCA 1.1, Section 2.3.1; MoCA 2.0, Section 5.3.1)</p>

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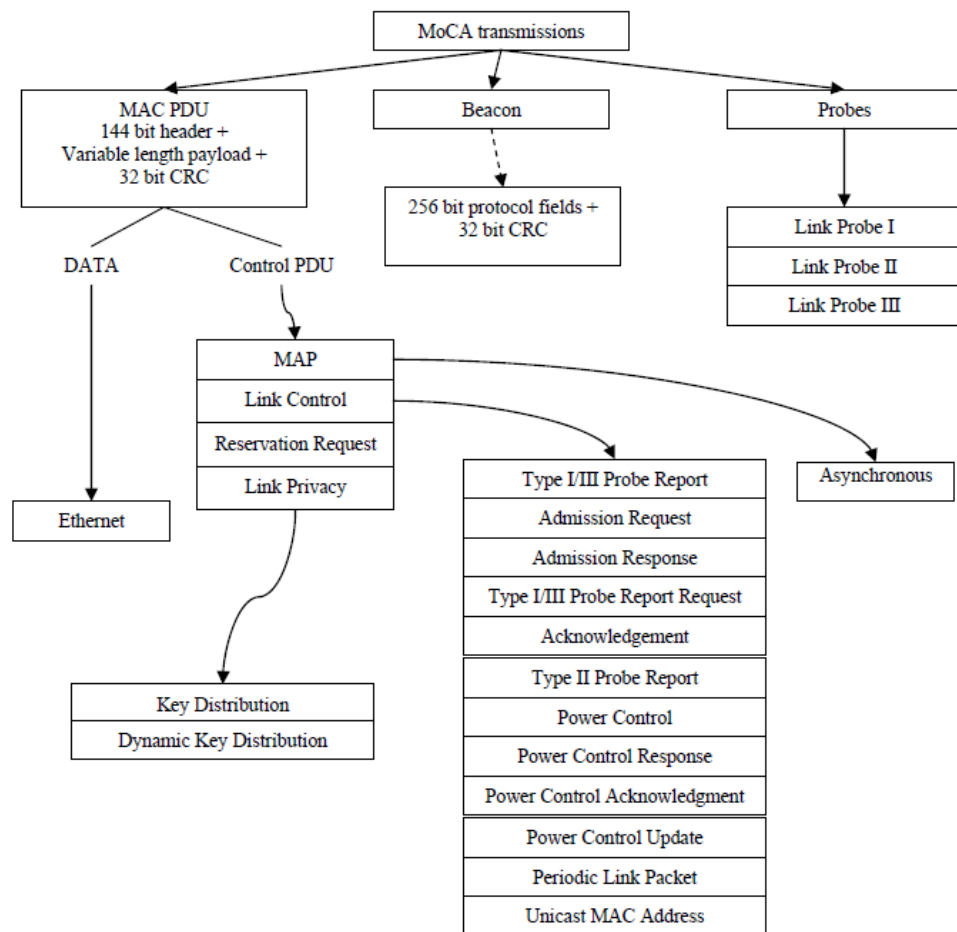


Figure A-1. MAC Transmission Types

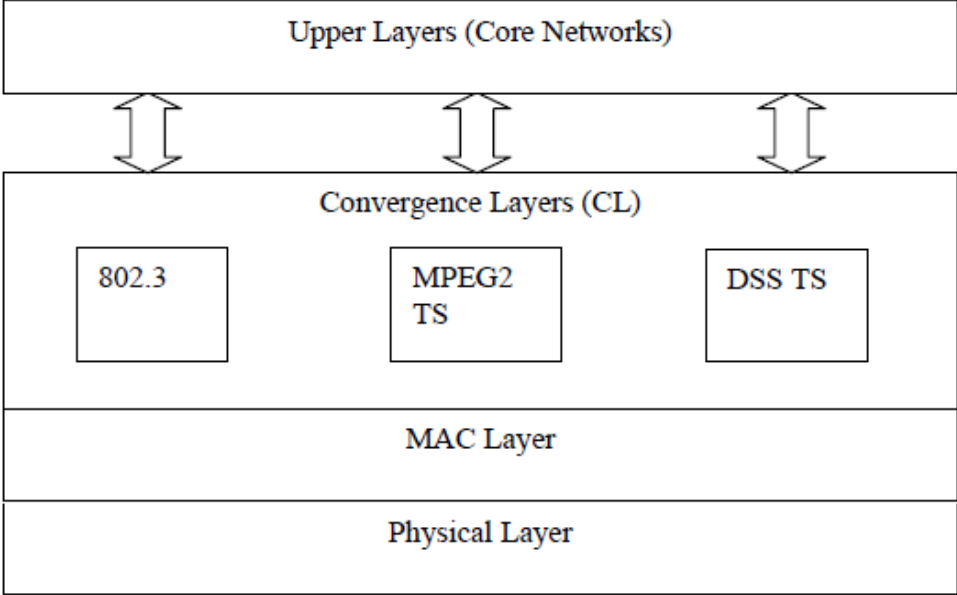
(MoCA 1.0, Figure A-1. *See also* MoCA 1.1, Figure A-1; MoCA 2.0, Figure 5-

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	<p>2)</p> <p>“The general format of the header part of a MoCA MAC control/data frame is given in Table A-1 below. The header is fixed in length and consists of a transmit clock time stamp, type and subtype of the packet, the version of the MoCA specification, IDs of the source and destination nodes of the packet, length of the packet and a header checksum.”  (MoCA 1.0, Section A.1. <i>See also</i> MoCA 1.1, Section A.1; MoCA 2.0, Section 6.1)</p> <p>“The payload of a MAC frame MAY vary in length from 8 bytes to 1518 bytes. Its format is dependent on the FRAME_TYPE and FRAME_SUBTYPE fields in the MAC frame header.”  (MoCA 1.0, Section A.2. <i>See also</i> MoCA 1.1, Section A.2; MoCA 2.0, Section 6.1)</p>

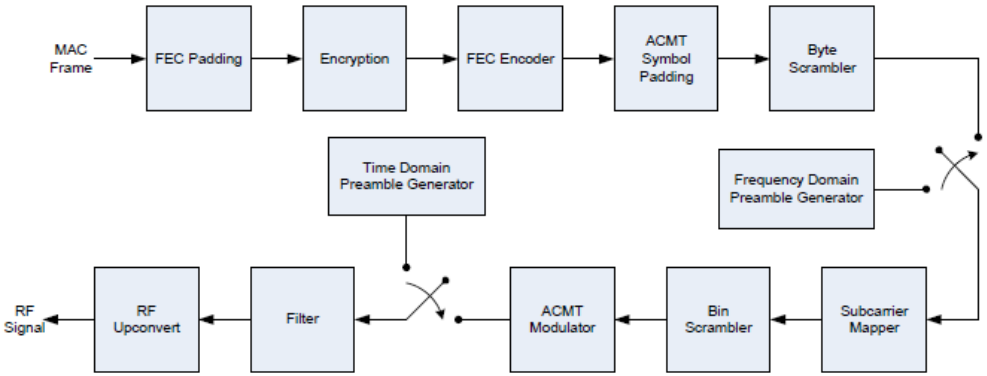
Table A-1. MAC Frame Header Fields

Field	Length	Usage
TRANSMIT_CLOCK	32 bits	System Time when the first bit is transmitted onto the medium
PACKET_SUBTYPE	4 bits	If packet type == MAP 0x0 = Asynchronous MAP If packet_type == Reservation Request 0x0 = Asynchronous data reservation request If packet_type == Link control 0x0 – Type I/III Probe Report 0x1 – Admission Request 0x2 – Admission response 0x3 – Key distribution 0x4 – Dynamic Key distribution 0x5 – Type I/III Probe Report Request 0x6 – Link Acknowledgement 0x7 – Type II Probe Report 0x8 – Periodic Link Packet 0x9 – Power Control 0xA – Power Control Response 0xB – Power Control Acknowledgement 0xC – Power Control Update 0xD – Topology update 0xE – Unicast MAC Address Notification 0xF – Reserved
PACKET_TYPE	4 bits	Indicates the type of MAC packet being transmitted 0x0 – MAP 0x1 – Reservation Request 0x2 – Link control 0x3 – Ethernet unicast/broadcast 0x4 – Reserved 0x5 – MPEG 0x6 – DSS 0x7 - 0xF – Reserved
VERSION	8 bits	Indicates the MAC frame version implemented by a node.  0x00 – node complies with this specification All other values Reserved
RESERVED	8 bits	0x00; Type I
SOURCE_NODE_ID	8 bits	Node ID of the source node
RESERVED	8 bits	0x00; Type I
DESTINATION_NODE_ID	8 bits	Node ID of the destination node
PACKET_LENGTH	16 bits	Length of payload and Payload CRC portion of this MAC Frame in bytes, (excluding the MAC Frame header).
RESERVED	32 bits	Type III
HEADER_CHECKSUM	16 bits	Header CRC

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<p>receiving the packets from the MAC subsystem at a Modem subsystem that is in signal communication with the MAC subsystem and that appends information to the packets; and</p>	<p>(MoCA 1.0, Table A-1. <i>See also</i> MoCA 1.1, Table A-1; MoCA 2.0, Section 6.1)</p> <p>The Accused MoCA Instrumentalities operate to receive the packets from the MAC subsystem at a Modem subsystem that is in signal communication with the MAC subsystem and that appends information to the packets as described below.</p> <p>For example, by virtue of their compliance with MoCA, the Accused MoCA Instrumentalities include circuitry and/or associated software modules that receive the packets from the MAC subsystem at a Modem subsystem that is in signal communication with the MAC subsystem and that appends information to the packets.</p> <p>“The MoCA system includes convergence layers for core networks such as IEEE 802.3 (Ethernet), video streams (i.e., MPEG-2 transport) and digital satellite streams (i.e. DSS transport). The MoCA system network model creates a coax network which supports communications between a convergence layer in one MoCA node to the corresponding convergence layer in another MoCA node. The protocol stack of a MoCA node is shown in Figure 1-1. The protocol stack consists of the physical layer, the MAC layer and one or more convergence layers (CL).”</p> <p>(MoCA 1.0, Section 1. <i>See also</i> MoCA 1.1, Section 1; MoCA 2.0, Section 5.1)</p> <p>“For every PHY data packet, the length of the MAC frame shall be extended, as necessary, by appending bytes (also referred to as byte-padding) to the end of the MAC frame such that the padded MAC frame length is equivalent to the number of input bytes required by the Reed-Solomon encoder. The number of pad bytes <math>M_{RSpad}</math> shall be computed according to the methodology described in</p>

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	<p>Section 4.3.3.1.”  (MoCA 1.0, Section 4.3.1. <i>See also</i> MoCA 1.1, Section 4.3.1; MoCA 2.0, Section 14.3.1)</p>  <p>The diagram illustrates the MoCA Node Protocol Stack. It consists of five main layers arranged vertically. At the top is a box labeled 'Upper Layers (Core Networks)'. Below this is a box labeled 'Convergence Layers (CL)'. Inside the 'Convergence Layers (CL)' box, there are three smaller boxes: '802.3' on the left, 'MPEG2 TS' in the center, and 'DSS TS' on the right. Below the 'Convergence Layers (CL)' box is a box labeled 'MAC Layer'. At the bottom is a box labeled 'Physical Layer'. Double-headed vertical arrows connect the 'Upper Layers (Core Networks)' box to the 'Convergence Layers (CL)' box, and the 'Convergence Layers (CL)' box to the 'MAC Layer' box. The 'MAC Layer' box is connected to the 'Physical Layer' box by a single vertical line.</p> <p><b>Figure 1-1. MoCA Node Protocol Stack</b></p> <p>(MoCA 1.0, Figure 1-1. <i>See also</i> MoCA 1.1, Figure 1-1; MoCA 2.0, Figure 5-1)</p> <p>“All communication over the medium between two or more MoCA devices shall be performed via scheduled exchanges of Physical Layer (PHY) packets. The scheduling of PHY packets shall be in accordance with the rules defined in</p>

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	<p>Section 3 describing the Media Access Control (MAC) Layer. The MAC specifies the time instant at which the first RF sample of the PHY packet shall be present upon the communication medium and the duration of the PHY packet. The MAC specifies the PHY packet duration specifically, but indirectly, via the PHY packet type, configuration and payload duration. This information is exchanged via the PHY Layer Management (PLM) entity as described in Section 3.13.”</p> <p>(MoCA 1.0, Section 4.2. <i>See also</i> MoCA 1.1, Section 4.2; MoCA 2.0, Section 14.1)</p> <p>“The PHY packet consists of a PHY preamble immediately followed by a PHY payload field as shown in Figure 4-1. The PHY preamble provides the receiver a reference signal that the receiver may use to acquire the packet, calibrate its algorithms and eventually, to decode the PHY payload. Depending on the link status and PHY payload data, one of several PHY preamble types may be used. These PHY preamble types are defined in detail in Section 4.4. The PHY payload immediately follows the PHY preamble and transports MAC data frames in the case of PHY data packets and PHY probe data in the case of PHY probe packets. PHY data packet payload generation is defined in detail in Section 4.3. PHY probe packet payload.”</p> <p>(MoCA 1.0, Section 4.2. <i>See also</i> MoCA 1.1, Section 4.2; MoCA 2.0, Section 14.1)</p>
upconverting the packets with the information for transmission via the broadband cable network at a RF subsystem that is in signal communication with the Modem subsystem;	<p>The Accused MoCA Instrumentalities operate to upconvert the packets with the information for transmission via the broadband cable network at a RF subsystem that is in signal communication with the Modem subsystem as described below.</p> <p>For example, by virtue of their compliance with MoCA, the Accused MoCA</p>

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	<p>Instrumentalities include circuitry and/or associated software modules that upconvert the packets with the information for transmission via the broadband cable network at a RF subsystem that is in signal communication with the Modem subsystem.</p> <p>“A PHY data packet consists of a PHY preamble immediately followed by a PHY payload. The transmitter reference model for generating a PHY data packet is shown in Figure 4-2. The PHY preamble consists of both a time-domain portion and a frequency-domain portion. As such, the block diagram shows these two portions entering the transmission processing chain at different points. The time-domain preamble is transmitted first in time followed immediately by the frequency domain preamble and finally followed by the ACMT modulated MAC frame.”</p> <p>(MoCA 1.0, Section 4.2.1.1. <i>See also</i> MoCA 1.1, Section 4.2.1.1; MoCA 2.0, Section 14.1)</p>  <p style="text-align: center;"><b>Figure 4-2. PHY Data Packet Transmission Processing</b></p>

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	<p>(MoCA 1.0, Figure 4-2. <i>See also</i> MoCA 1.1, Figure 4-2, MoCA 2.0, Figure 14-2)</p> <p>“PHY data packets carry MAC data and control frames as PHY payload. Figure 4-3 shows an example of how a PHY data packet is constructed from a MAC frame. In this example, the FEC-padded MAC frame is encrypted and encoded into two Reed-Solomon code words, the last code word being shortened to minimize FEC padding. The encoded data is ACMT padded, scrambled and modulated onto the sub-carriers of three ACMT symbols. The ACMT symbols are bin-scrambled and then transformed to the time-domain where a cyclic prefix is added to each ACMT symbol to obtain the PHY data payload. Finally, a preamble is prepended to the PHY data payload and is filtered and upconverted to RF for transmission onto the media.”</p> <p>(MoCA 1.1, Section 4.2.1.2. <i>See also</i> MoCA 1.1, Section 4.2.1.2; MoCA 2.0, Sections 14.2.4, 14.3.10).</p>
<p>wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.</p>	<p>At least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field as described below.</p> <p>For example, at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field in compliance with MoCA.</p>

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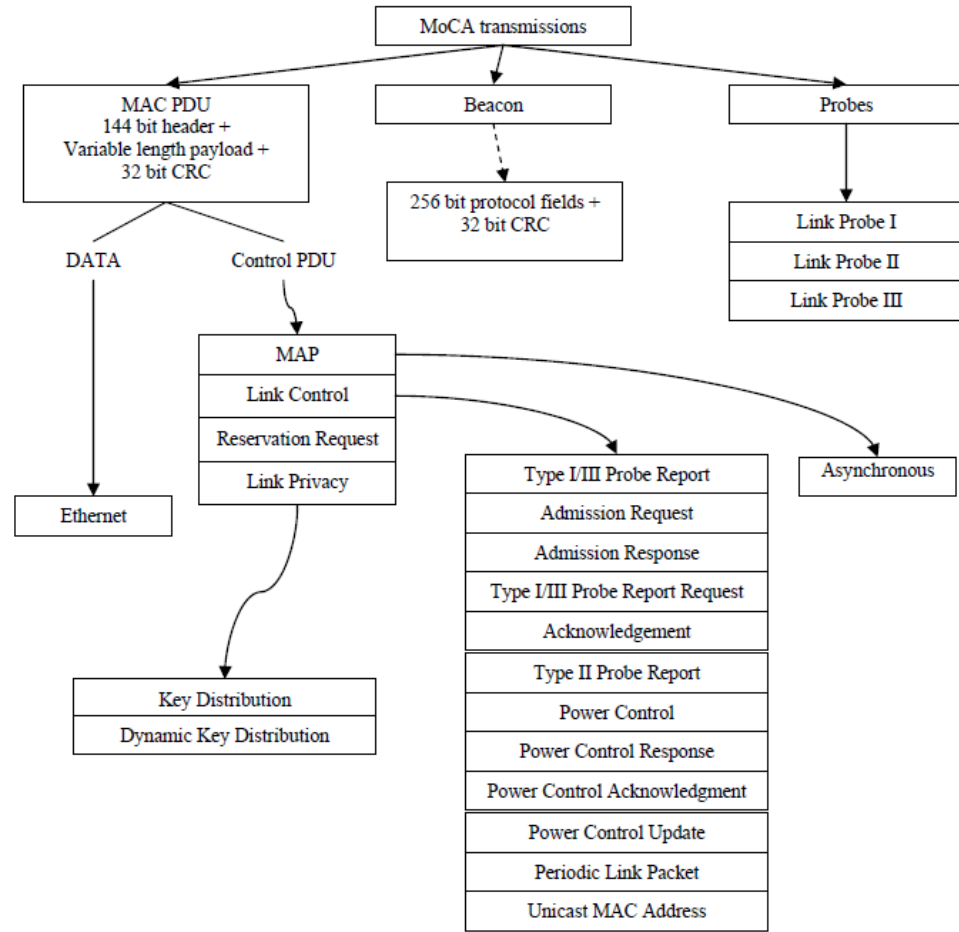


Figure A-1. MAC Transmission Types

(MoCA 1.0, Figure A-1. *See also* MoCA 1.1, Figure A-1; MoCA 2.0, Figure 5-

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	<p>2)</p> <p>“Beacon operation is critical to a MoCA system and it is discussed first. Beacon signal is used by new nodes to find and join a MoCA Network. It is also necessary for the continued robust operation of the MoCA Network.”  (MoCA 1.0, Section 3.1. <i>See also</i> MoCA 1.1, Section 3.1; MoCA 2.0, Section 7.1.1)</p> <p>“The NC MUST transmit Beacons at fixed intervals. This interval between two consecutive Beacon packets is called the “Beacon Synch Interval” (BSI). (See Appendix A for parameter values).”  (MoCA 1.0, Section 3.3. <i>See also</i> MoCA 1.1, Section 3.3; MoCA 2.0, Section 7.1.1)</p>

Table 3-1. Beacon Frame Format

Field	Length	Explanation
TRANSMIT_CLOCK	32 bits	System clock when Beacon transmission begins on the medium (beginning of preamble).
BEACON_VERSION	8 bits	= 0x00
MOCA_VERSION	8 bits	The lowest MOCA_VERSION_NUMBER of all nodes in the MoCA Network (0x10 corresponds to MoCA 1.0)
CHANNEL_NUMBER	8 bits	RF channel number on which this beacon is being sent (Channel center frequency = 25 MHz Channel Number. 32 is the lowest value allowed for this field. This corresponds to 800 MHz center frequency).
TABOO_MASK_START	8 bits	RF channel number of the lowest frequency channel covered by the Taboo Channel Mask field.
TABOO_CHANNEL_MASK	24 bits	Bit value 1 = unusable channel MSB = lowest frequency in the range (starting at Taboo Mask Start frequency).
CHANGE_FIELD	6 bits	Used to indicate upcoming NC handoff.
SEQUENCE_NUMBER	2 bits	Countdown to NC handoff.
BACKUP_NC_ID	6 bits	Node ID of the backup NC. If no backup NC is available, NC fills this field with its own ID.
NEXT_BEACON_POINTER	6 bits	Number of milliseconds to the next Beacon transmission. This value MUST be equal to 10. This is equivalent to 500,000 SLOT_TIME's.
NEXT_NC_ID	6 bits	Node ID of the new NC (NC being handed off to) This field is meaningful only when a handoff is signaled.
ACF_LENGTH	16 bits	Duration in units of SLOT_TIME of the following Admission Control Frame
ACF_TYPE	8 bits	Indicates what type of admission frame is scheduled  0x00 – Admission Request 0x01 – Type A Loopback Transmission 0x02 – Type B Loopback Transmission 0x03 – Admission Response 0x04 – Initial Type I Probe TX by NC 0x05 – Initial Type II Probe Report TX to NC 0x06 – Type II Probe TX by NC 0x07 – Type C Loopback Transmission by NN 0x08 – Type II Probe RX by NC 0x09 – Type C Loopback Transmission by NC 0x0A – Type I Probe TX by NC 0x0B – Type I Probe Report TX to NC 0x0C – GCD Distribution Report TX by NC 0x0D – Link Acknowledgement 0x0E – Type II Link Acknowledgement 0x0F – No ACF

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	ACF_POINTER	18 bits	Other values MUST NOT be used Transmission time of the next Admission Control Frame from the beginning of this BSI, in multiples of SLOT_TIME. This transmission MUST be scheduled at least T5 after the start of the Beacon transmission.
	ASYNCHRONOUS_MAP_LENGTH	16 bits	Duration in multiples of SLOT_TIME
	ASYNCHRONOUS_MAP_PROFILE	8 bits	The PHY profile used for transmitting the first asynchronous MAP following this Beacon transmission
	ASYNCHRONOUS_MAP_POINTER	18 bits	Transmission time of the next Asynchronous MAP from the beginning of this BSI, in units of SLOT_TIME. Value '0' in this field indicates that no Asynchronous MAPs are sent in the beacon period. This transmission MUST be scheduled at least T5 after the start of the Beacon transmission.
	RESERVED	39 bits	Type III
	BEACON_BACKOFF	3 bits	Indicates the value in multiple of 3 dB by which the power of this Beacon is reduced relative to the NC's maximum transmit power. This field MUST represent the value of the Beacon Backoff.  0x0 – 0 dB 0x1 – 3 dB 0x2 – 6 dB 0x3 – 9 dB 0x4 – 12 dB 0x5 – 15 dB Other values Reserved
	NCID	6 bits	Node ID of the Network Coordinator
	RESERVED	10 bits	Type III
	BEACON_CRC	32 bit	CRC over all bits (using same algorithm as MAC Frame payload CRC)
	(MoCA 1.0, Table 3-1. <i>See also</i> MoCA 1.1, Table 3-1; MoCA 2.0, Table 6-2)		